



## NEWS from Trudell Medical International\*

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### The Misuse of Dry Powder Inhalers in Patients with Asthma and COPD

The number of drug formulations available in Dry Powder Inhalers (DPIs) has increased over the past few years. The size and convenience of the devices likely contributes to the acceptance of the product, but could negatively affect the delivery of respiratory medications in both Paediatric and Geriatric patient groups.<sup>1,2</sup>

It has been noted that patients are more likely to feel frustrated or overwhelmed when faced with the prospect of having multiple medications. This can be aggravated if each drug is delivered in a different type of device.<sup>3</sup> Unlike pressurized Metered Dose Inhalers (pMDIs), DPIs each use a different delivery mechanism – which means that the inspiratory flow rate required to activate each of the devices is also different.<sup>1</sup>

Inspiratory flow rates in paediatric (<12 years) and geriatric patients (>70 years), may not be sufficient enough to generate the pressure required to properly activate the release of the drug.<sup>1,2</sup> When combined with patient error, the drug delivery rates are affected even more. There is considerable inter-patient variability in inhalation technique, inspiratory flow rate, tidal volume, breathing frequency and even airway obstruction, in addition to variations in other factors such as patient dexterity and ability to self-administer the dose.

The use of a Valved Holding Chamber with pMDI is advocated across the spectrum of patient populations, and has the ability to overcome all of the challenges listed above. With the proper type of VHC (mask or mouthpiece), patients are able to overcome the challenges of taking their aerosol medication which is one of the milestones of successful asthma management.<sup>4</sup> In addition, the exclusive **Flow-Vu**\* Indicator and **FlowSignal**\* Whistle reinforce proper inhalation technique and minimize the potential for human error by confirming inhalation is being performed correctly.

The **AeroChamber**\* Brand of VHC offers a full range of products, including the **AeroChamber Plus**\* VHC with **Flow-Vu**\* Inspiratory Flow Indicator, designed specifically for each patient type. The devices are easy to use and provide caregivers with peace of mind that medication has been delivered effectively. For more information about **AeroChamber**\* Brand of VHC and other innovative new products, please visit our website.

<sup>1</sup> W Janssens, P VandenBrande, E Hardeman, E De Langhe, T Philips, T Troosters and M Decramer. *Inspiratory flow rates at different levels of resistance in elderly COPD patients*. Eur Respir J. 2008; 31: 78-83

<sup>2</sup> H Miyahara, S Korematsu, T Nagakura and T Izumi. *Efficacy of fluticasone metered-dose inhaler and dry powder inhaler for pediatric asthma*. Pediatrics International. 2008; 50: 103-108

<sup>3</sup> P Barnes, JC Virchow, J Sanchis, T Welte and S Pedersen. *Asthma management: important issues*. Eur Respir Rev 2005; 14(97): 147-151

<sup>4</sup> Pedersen S, Frost L, Arnfred T. *Errors in inhalation technique and efficiency in inhaler use in asthmatic children*. Allergy 1986; 41: 118-124.

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**AeroChamber**  
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